

WHAT IS CLAIMED IS:

1. A critical dimension measuring instrument comprising:
 - a light source;
 - a beam-shaping optical system;
 - a condenser having a condenser pupil;
 - a first microlens array arrangement including a plurality of first microlenses, each of the first microlenses being configured to generate a respective divergent ray bundle that fills the condenser pupil;
 - a first auxiliary optical element having positive refractive power, the condenser pupil being disposed in a focal plane of the first auxiliary optical element;
 - a second auxiliary optical element having positive refractive power; and
 - a second microlens array arrangement including a plurality of second microlenses;wherein the first microlens array arrangement, the first auxiliary optical element, the second auxiliary optical element and the second microlens array arrangement are disposed in successive fashion between the beam-shaping optical system and the condenser.
2. The critical dimension measuring instrument as recited in claim 1 wherein the light source includes a laser and the beam-shaping optical system includes a beam-spreading optical system.
3. The critical dimension measuring instrument as recited in claim 1 wherein the light source includes a gas discharge lamp and the beam-shaping optical system includes a collector.
4. The critical dimension measuring instrument as recited in claim 3 further comprising a spectrally effective filter system configured to allow only a spectral

component of a spectrum of the light source necessary for a particular measurement to pass.

5. The critical dimension measuring instrument as recited in claim 4 wherein the spectrally effective filter system is disposed at an output of the collector.
6. The critical dimension measuring instrument as recited in claim 1 wherein the plurality of first microlenses includes a plurality of identical hexagonal honeycomb-shaped microlenses.
7. The critical dimension measuring instrument as recited in claim 1 wherein the plurality of second microlenses includes a plurality of identical hexagonal honeycomb-shaped microlenses.
8. The critical dimension measuring instrument as recited in claim 1 wherein the plurality of first microlenses includes a plurality of identical square microlenses.
9. The critical dimension measuring instrument as recited in claim 1 wherein the plurality of second microlenses includes a plurality of identical square microlenses.
10. The critical dimension measuring instrument as recited in claim 1 wherein the first microlens array includes a third and a fourth microlens array each including a plurality of identical cylindrical microlenses, the third and fourth microlens arrays being disposed in crossed fashion with respect to respective cylinder axes of the cylindrical microlenses.
11. The critical dimension measuring instrument as recited in claim 1 wherein the second microlens array includes a fifth and a sixth microlens array each

including a plurality of identical cylindrical microlenses, the fifth and a sixth microlens arrays being disposed in crossed fashion with respect to respective cylinder axes of the cylindrical microlenses.

12. The critical dimension measuring instrument as recited in claim 1 wherein the first microlens array arrangement includes a micro-honeycomb condenser.

13. The critical dimension measuring instrument as recited in claim 1 wherein the second microlens array arrangement includes a micro-honeycomb condenser.